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5-7-2009

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Recommended Citation

Yang, Xiao-Bing, "Spring is Time to Check Alfalfa for Foliar Diseases" (2009). *Integrated Crop Management News*. Paper 655.
<http://lib.dr.iastate.edu/cropnews/655>

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Spring is Time to Check Alfalfa for Foliar Diseases

By XB Yang, Department of Plant Pathology

Early May is the time to check for alfalfa diseases. When spring has cool temperatures and frequent rains, the weather will promote the development of leaf diseases in some alfalfa fields. Knowing the occurrence of alfalfa diseases in early May helps make decisions about the first cutting. High levels of alfalfa foliar diseases such as spring black stem can cause early defoliation before you make the first cut, resulting in yield reduction.

Reports early this week suggest occurrence of low level alfalfa foliar diseases with some foliar diseases found in fields. When you scout, pay attention to second and third year alfalfa fields as they have greater disease risk than first year alfalfa fields. The diseases may occur in the past year and the pathogenic fungi can build up over time. Fields in lower spots with high soil moisture have higher disease risk. Keep in mind that there are differences in disease tolerance between varieties.

If disease level is high, early cutting generally is recommended so that defoliation can be avoided. Cutting as early as mid-bud stage to avoid severe defoliation may be necessary when the disease is severe. In Iowa, three diseases are most common in spring – spring black stem, downy mildew, and *Leptosphaerulina* leaf spot. Below is how to identify the three diseases.

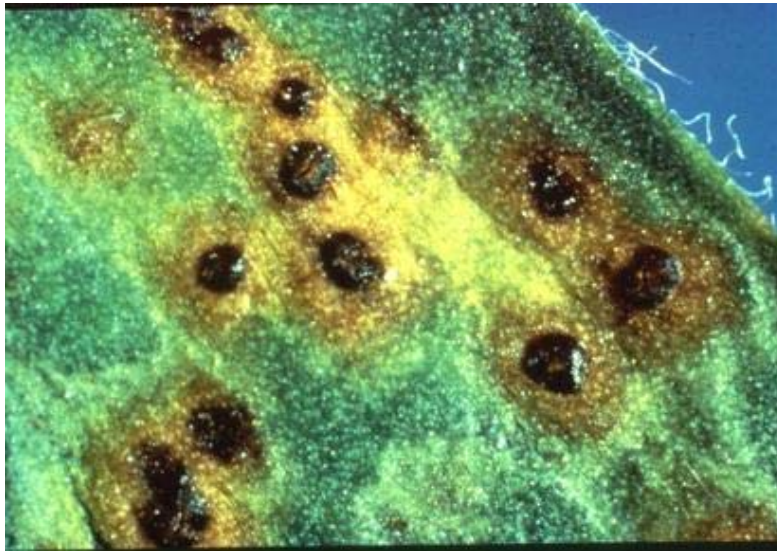
Spring black stem produces numerous small, dark brown-to-black spots that first occur on the lower leaves and petioles, and appearing later on the stems. Irregularly shaped lesions on leaves increase in size and coalesce. Lesions on stems and petioles enlarge and may blacken large areas near the base of the plant. The fungus that causes this disease is dispersed by splashing rain. This disease is very common in Iowa and severe infection can result in defoliation.

Downy mildew is caused by the fungus *Peronospora trifoliorum*. This fungus infects alfalfa in spring when temperature is low and moisture is high. The weather conditions this spring are ideal for downy mildew. Severe disease was observed in 1993 when the spring was wet and cold. Symptoms of this disease are chlorotic blotches on the upper leaf surface and a white-to-gray mold on the lower leaf surface. Sometimes, the color may be pale. The fungus survives in shoots over the summer and spreads in the fall. If the disease is a problem in your field, consider planting a resistant variety in your next planting.

***Leptosphaerulina* leaf spot** mainly attacks leaves. Both young and old leaves are susceptible to infection. Lesions often start as small black spots and remain as "pepper spots" or enlarge to "eyespot." The lesions have light brown-to-tan centers with darker brown borders and are often surrounded by a chlorotic area. This disease is dispersed similarly to spring black stem, by splashing rain.

When you scout a field, check places where alfalfa grows well or the canopy is dense. Diseases are likely to start in dense canopy. Also because these

diseases start by attacking low leaves of plants, look for diseased leaves and stems in lower portions of the canopy. These diseases progress from lower portion of plants to the top. Pay special attention to fields that had disease problems last year because they have greater risk than other fields for inoculum carryover from the winter.



Lesion of alfalfa black stem.



Leaf with alfalfa black stem.



Alfalfa downy mildew.

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This article was published originally on 5/7/2009. The information contained within the article may or may not be up to date depending on when you are accessing the information.

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